

user manual

# EPIA-P720

## Pico-ITX Mainboard

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## Regulatory Compliance

### FCC-A Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his personal expense.

### Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.



Tested To Comply  
With FCC Standards  
FOR HOME OR OFFICE USE

## Battery Recycling and Disposal



Only use the appropriate battery specified for this product.  
Do not re-use, recharge, or reheat an old battery.  
Do not attempt to force open the battery.  
Do not discard used batteries with regular trash.  
Discard used batteries according to local regulations.

## Safety Precautions



### Do's

- Always read the safety instructions carefully.
- Keep this User's Manual for future reference.
- All cautions and warnings on the equipment should be noted.
- Keep this equipment away from humidity.
- Lay this equipment on a reliable flat surface before setting it up.
- Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
- Place the power cord in such a way that people cannot step on it.
- Always unplug the power cord before inserting any add-on card or module.
- If any of the following situations arises, get the equipment checked by authorized service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment has not worked well or you cannot get it work according to User's Manual.
  - The equipment has dropped and damaged.
  - The equipment has obvious sign of breakage.



### Don'ts

- Do not leave this equipment in an environment unconditioned or in a storage temperature above 70°C (158°F). The equipment may be damaged.
- Do not leave this equipment in direct sunlight.
- Never pour any liquid into the opening. Liquid can cause damage or electrical shock.
- Do not place anything over the power cord.
- Do not cover the ventilation holes. The openings on the enclosure protect the equipment from overheating

## Box Contents

- 1 x EPIA-P720 Pico-ITX mainboard
- 1 x P720-A I/O module board
- 1 x SATA cable
- 1 x SATA power cable
- 1 x DC-In cable
- 1 x Driver utility CD

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# 1

## Product Overview

The VIA EPIA-P720 is an ultra-compact and highly integrated Pico-ITX mainboard and the smallest stand-alone form-factor available today. Through a high level of integration, the Pico-ITX form factor is 75% smaller than the existing Mini-ITX form factor. The mainboard enables the creation of an exciting new generation of small, ergonomic, innovative and affordable embedded systems.

The VIA EPIA-P720 Pico-ITX mainboard is rich in I/O integration and comes with an integrated VIA Eden ULV 1.0GHz NanoBGA2 processor, boasting of ultra-low power consumption and cool operation.

## KEY COMPONENTS

### VIA Eden ULV 1.0GHz NanoBGA2 Processor

Due to its ultra cool, ultra quiet, and reliable performance, the VIA Eden ULV 1.0GHz NanoBGA2 processor is a perfect fit for thin client, set top boxes, silent desktop. With a maximum power envelope of 3.5W, the VIA Eden ULV 1.0GHz NanoBGA2 processor offers impressive power efficiency and highly effective heat dissipation all within an ultra compact NanoBGA2 package measuring just 21mm x 21mm. When combined with the most recent VIA VX855 Media System Processor (MSP), which have been designed as companion sets for the latest VIA processors, system developers can utilize an impressive range of features for a wide range of desktop and embedded applications.

### VIA VX855 Media System Processor

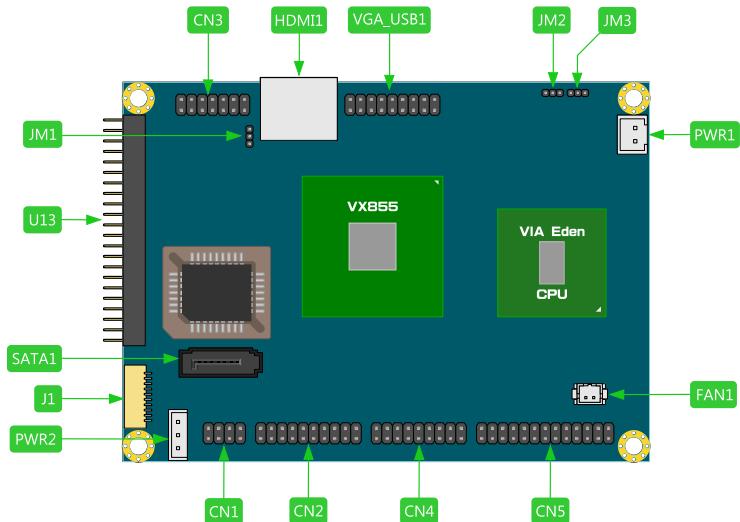
The VIA VX855 MSP integrates a premium graphics engine, an HD audio controller, a DDR2 memory controller, a 400MHz FSB processor interface, and extensive I/O capabilities support in a single chip design. Complementing the power-efficient VIA Eden ULV 1.0GHz NanoBGA2 processor, the VX855 is based on a highly sophisticated power efficient architecture that enables such rich integration into a compact package with a maximum power envelope of just 2.3 W.

# MAINBOARD SPECIFICATIONS

<b>CPU</b>	VIA Eden ULV 1.0 GHz NanoBGA2 processor <ul style="list-style-type: none"><li>• NanoBGA2 package</li><li>• 400 MHz Front Side Bus</li></ul>
<b>Chipset</b>	VIA VX855 All-in-One System Processor
<b>Graphics</b>	Integrated VIA Chrome9™ HCM DX9 with MPEG-2/4 Accelerators
<b>System Memory</b>	One DDR2 800/667 SODIMM slot (up to 2 GB)
<b>Onboard Storage</b>	One UltraDMA 133/100/66/33 44-pin IDE connector One SATA 3Gb/s connector
<b>Audio</b>	VIA VT1708B High Definition Audio Codec
<b>LAN</b>	One VIA VT6122 Gigabit Ethernet controller
<b>Onboard I/O Connectors</b>	One Audio pin connector for Line-out, Line-in and Mic-in One Single-channel LVDS connector (5V/3V) One LPC pin connector One SMBus pin connector One DIO pin connector(4 GPI & 4 GPO) Two UART port / VCP pin header One CPU fan connector One PS2 mouse/keyboard pin header One USB pin header One Front panel pin header One Backlight control pin header One SATA power connector One +12V DC-in 2-pin connector
<b>I/O Ports</b>	One HDMI port One VGA port One GigaLAN port Two USB ports Wake-On-LAN and Keyboard Power-on RTC Timer Watch Dog Timer System power management, AC power failure AMI BIOS with 4Mbit LPC flash memory Windows XP/CE/XPe and Linux
<b>System Monitoring and Management</b>	Temperature: 0°C up to 60°C Humidity: 0% ~ 95% (relative humidity; non-condensing) CE/FCC/BSMI/RoHS
<b>BIOS</b>	135 mm(w) x 45 mm(H) x 131 mm (D)
<b>Operating System</b>	Pico-ITX
<b>Operating Environment</b>	10 cm x 7.2 cm
<b>Compliance</b>	
<b>Dimensions</b>	
<b>Form Factor</b>	

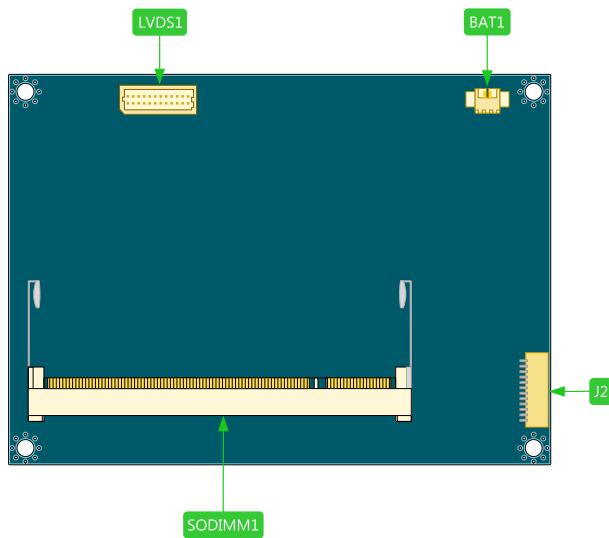
# EPIA-P720 LAYOUT

## Top Side



Symbol	Description	Symbol	Description
CN1	Front Audio pin header	PWR1	DC-In power connector
CN2	USB and USB Device port pin header	PWR2	SATA Power connector
CN3	LAN Ethernet pin header	FAN1	System Fan connector
CN4	Front Panel and PS/2 KBMS pin header	VGA_USB1	VGA and USB pin header
CN5	LPC, SMBus and Digital I/O pin header	IDE1	IDE pin header
JM1	Clear CMOS jumper	HDMI1	HDMI port
JM2	Panel Power Selector	SATA1	SATA port
JM3	Panel Backlight Power Selector	J1	VCP/UART port 2

## Bottom Side

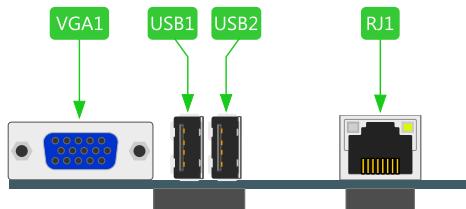


Symbol	Description	Symbol	Description
BAT1	CMOS Battery connector	SODIMM1	DDR2 SODIMM slot
LVDS1	1-CH LVDS Panel connector	J2	VCP/UART port 1

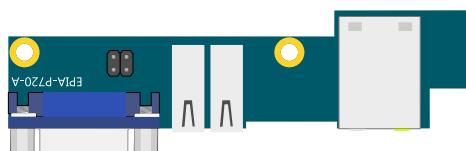
# P720-A I/O MODULE LAYOUT

The VIA EPIA-P720 Pico-ITX mainboard is bundled with an I/O board (P720-A) to support connections to LAN, VGA and USB.

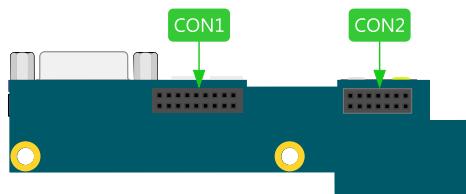
## Front View



## Top View



## Bottom View



Symbol	Description
VGA1	VGA port
USB1	USB 2.0 port 1
USB2	USB 2.0 port 2
RJ1	RJ-45 LAN port
CON1	VGA & USB board-to-board connector
CON2	LAN board-to-board connector

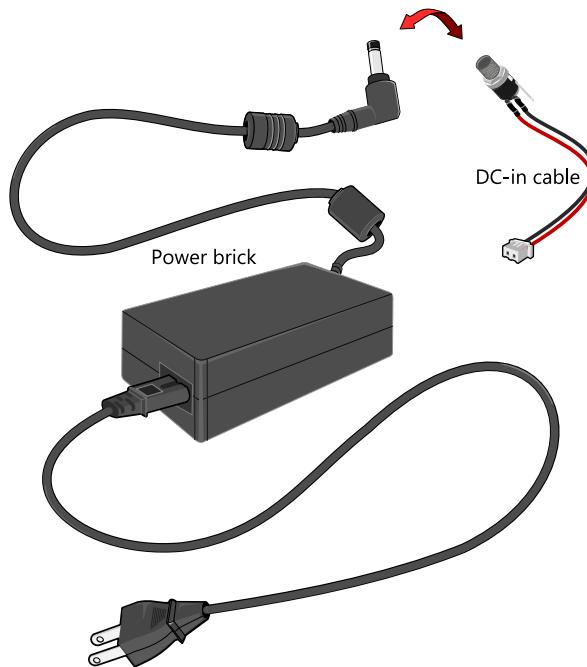
# DEVELOPMENT KIT ACCESSORIES

## DC-In Cable

The DC-In power cable provides a means to connect to the power brick.

## Power Brick

The power brick provides a regulated 12V/5A output to power up the EPIA-P720 mainboard.



### Note:

The Power brick is not included in the package of EPIA-P720 and this item should be purchased separately.



# 2

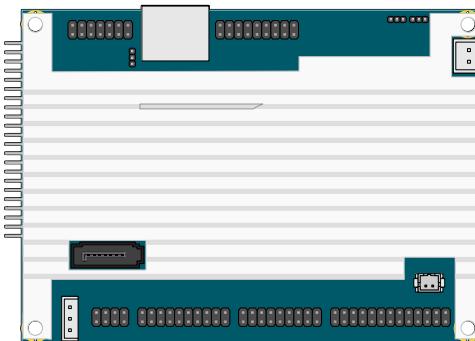
## Onboard Connectors, Slots and Pin Headers

This chapter provides you with information about hardware installation procedures. It is recommended to use a grounded wrist strap before handling computer components. Electrostatic discharge (ESD) can damage some components.

## TOP SIDE CONNECTORS

### VIA Eden ULV 1.0GHz with a Fanless Heatsink

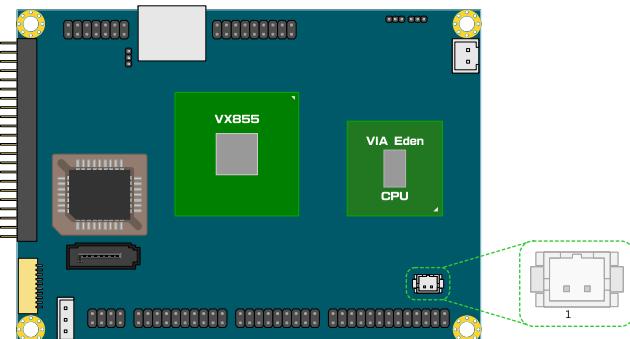
The VIA EPIA-P720 Pico-ITX mainboard is packaged with a standard VIA Eden ULV 1.0GHz NanoBGA2 processor. The processor does not require a heatsink with fan because of its highly power efficient and ultra cool performance.



### System Fan connector: FAN1

FAN1 runs on +5V and maintains system cooling. When connecting the cable to the connector, always be aware that the red wire (positive wire) should be connected to the +5V pin. The black wire is the ground wire and should always be connected to GND.

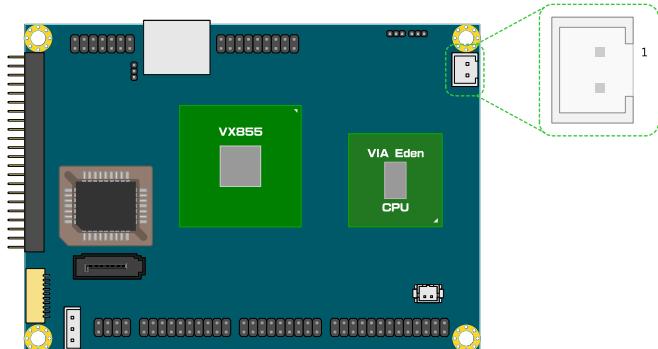
Pin	Signal
1	+5V
2	GND



## DC-In Power connector: PWR1

EPIA-P720 has an onboard DC-In 2-pin power connector to connect the DC-In power cable.

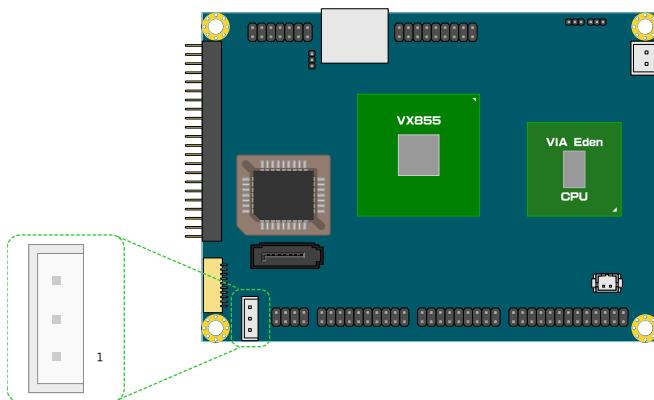
Pin	Signal
1	DC In (+12V)
2	GND



## Serial ATA Power connector: PWR2

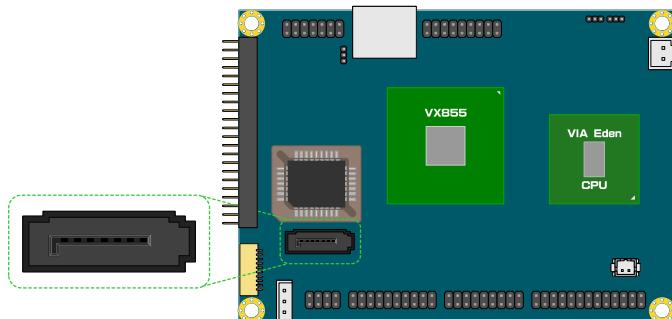
The mainboard supports a 3-pin SATA power connector for SATA power cable. Plug the SATA power cable into the SATA power connector. Make sure the power plug is inserted in the proper orientation and pins are aligned.

Pin	Signal
1	+5V
2	+12V
3	GND



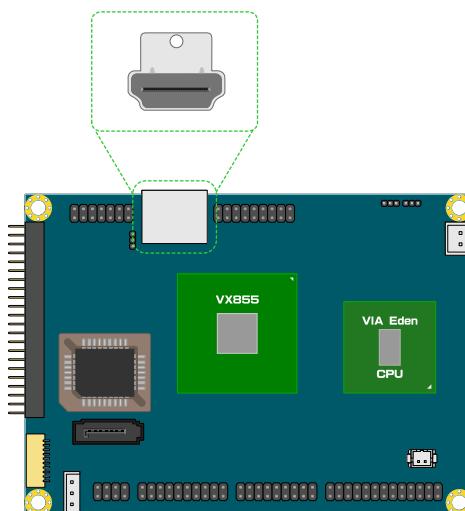
## Serial ATA connector: SATA1

The current SATA interface allows a data transfer rate of up to 300 MB/s – approximately 225% faster than Ultra DMA parallel ATA.



## HDMI port connector: HDMI1

The mainboard has a High Definition Multimedia Interface (HDMI) port for connecting to high definition video and digital audio. The HDMI port allows you to connect digital video devices which utilize a high definition video signal. The HDMI port is HDMI 1.3 and HDCP 1.2 compatible.



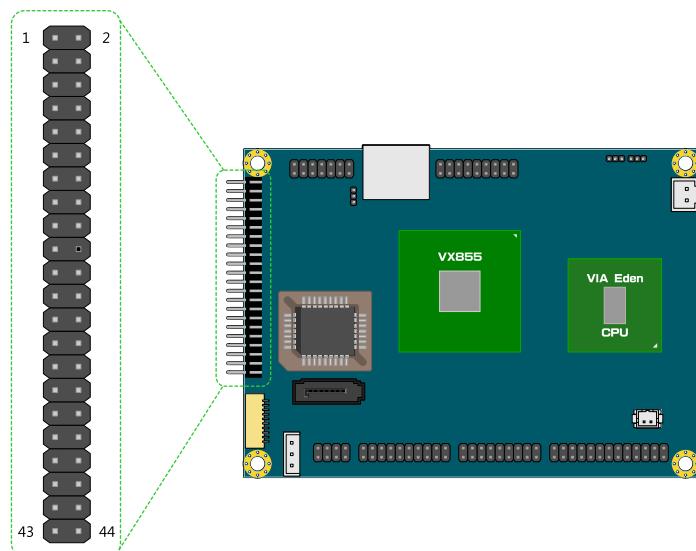
### Note:

CEC feature is not supported.

## IDE pin header: IDE1

The mainboard has an Ultra DMA 133/100 controller. You can connect up to two IDE devices in any combination.

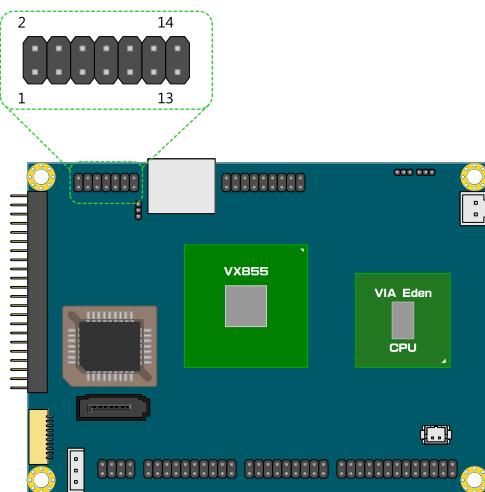
Pin	Signal	Pin	Signal
1	-IDERST	2	GND
3	PDD7	4	PDD8
5	PDD6	6	PDD9
7	PDD5	8	PDD10
9	PDD4	10	PDD11
11	PDD3	12	PDD12
13	PDD0	14	PDD13
15	PDD1	16	PDD14
17	PDD2	18	PDD15
19	GND	20	KEY
21	PDDREQ	22	GND
23	PDDIOW	24	GND
25	PDDIOR	26	GND
27	PIORDY	28	GND
29	PDDACK	30	GND
31	-IRQ14	32	NC
33	PDA1	34	PDIAG
35	PDA0	36	PDA2
37	PDCTS1	38	PDCTS3
39	-HD_LED1	40	GND
41	+5V	42	+5V
43	GND	44	NC



## Ethernet LAN pin header: CN3

The Ethernet LAN pin header is for connecting to the P720-A I/O module.

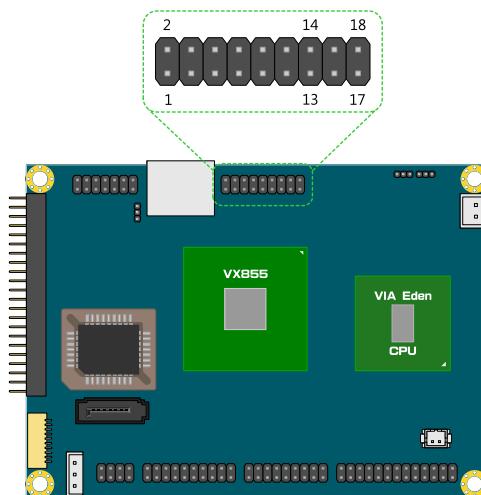
Pin	Signal	Pin	Signal
1	A3V3GL(+3.3V)	2	+3.3VSUS
3	TXNC	4	TXND
5	TXPC	6	TXPD
7	TXNA	8	TXNB
9	TXPA	10	TXPB
11	GND	12	LED1
13	LED2	14	LINK ACT



## VGA and USB pin header: VGA\_USB1

The VGA and USB pin header is for connecting to the P720-A I/O module.

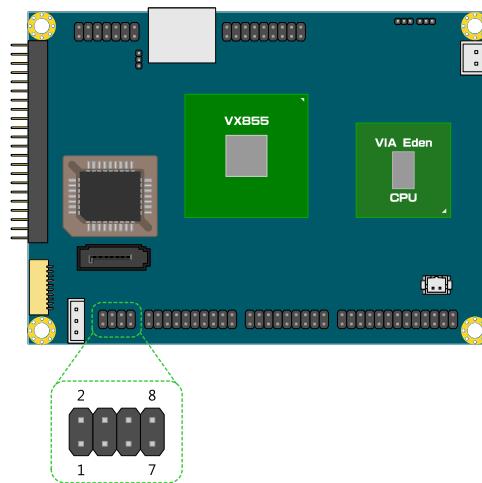
Pin	Signal	Pin	Signal
1	VGA_RED	2	+5V
3	VGA_GREEN	4	GND
5	VGA_BLUE	6	DDC_DATA
7	GND	8	DDC_CLK
9	+5VUSB_P	10	VGA_VS
11	VGA_HS	12	GND
13	+5VSUS	14	GND
15	USBHPO-	16	USBHP1-/USBDP_D-
17	USBHPO+	18	USBHP1+/USBDP_D+



## Front Audio pin header: CN1

This pin header allows you to connect a front audio to the mainboard.

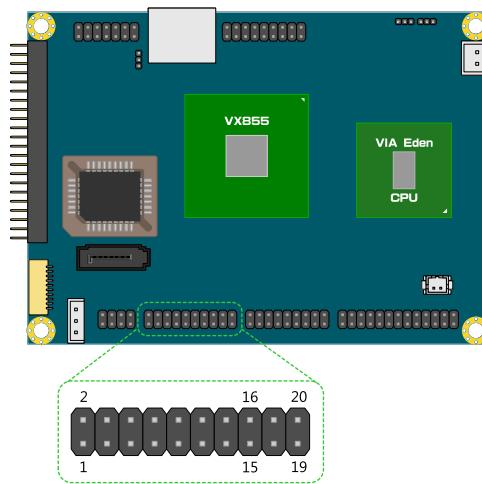
Pin	Signal	Pin	Signal
1	LINE IN_R	2	AUD_GND
3	LINE IN_L	4	MIC IN_L
5	LINE OUT_R	6	MIC IN_R
7	LINE OUT_L	8	JACK SENSE



## USB pin header: CN2

This 20-pin USB pin header allows you to connect up to four USB2.0 ports.

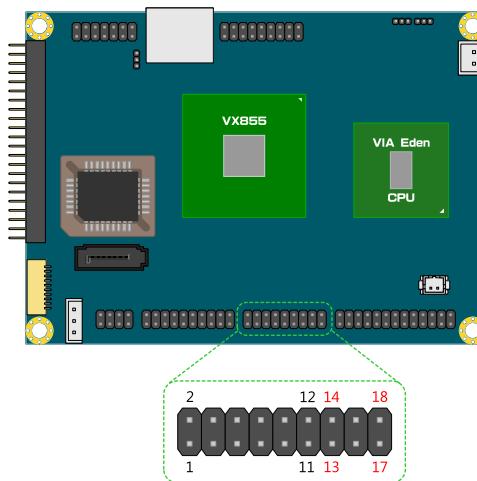
Pin	Signal	Pin	Signal
1	GND	2	GND
3	GND	4	GND
5	USB VD2+	6	USB VD3+
7	USB VD2-	8	USB VD3-
9	+5VSUS	10	+5VSUS
11	USB VD5-	12	USB VD4-
13	USB VD5+	14	USB VD4+
15	reserved	16	reserved
17	reserved	18	reserved
19	reserved	20	reserved



## Front Panel and PS/2 KBMS pin header: CN4

This single pin header allows you to connect the power switch, reset switch, power LED, HDD LED, case speaker and two PS/2 ports.

Pin	Signal	Pin	Signal
1	+PWR_LED	2	+HD_LED
3	+5VSUS (for LED use)	4	-HD_LED
5	GND	6	PW_SW
7	SPEAK_BZ	8	GND
9	GND	10	RST_SW
11	-PWR_LED	12	GND
13	+5VSUS	14	GND
15	KB_CLK	16	KB_DT
17	MS_CLK	18	MS_DT

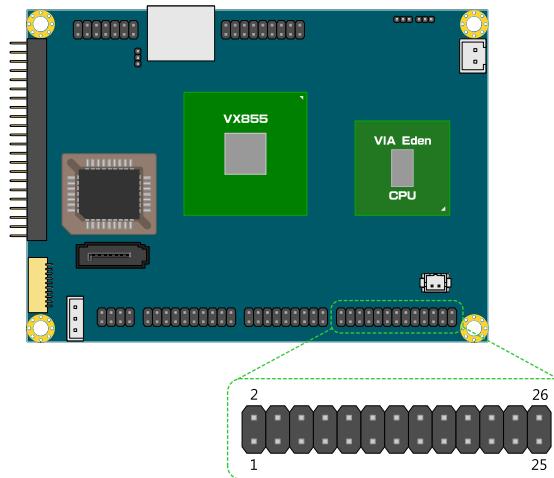
**Note:**

Pins 1 to 12 are for Front Panel and pin 13 to 18 use for PS/2 KBMS.

## LPC, SMBus and Digital I/O pin header: CN5

This single pin header allows the connection of LPC, SMBus devices and the Digital Input and Output.

Pin	Signal	Pin	Signal
1	GND	2	LAD3
3	SIOOSC	4	LAD2
5	LPCCLK	6	LAD1
7	-LDRO1	8	-LFRAME
9	SERIRQ	10	LAD0
11	-SIOSMI/-PME	12	-PCIRST1
13	SMB_CLK	14	SMB_DAT
15	+5V	16	+3.3V
17	GPO5/CSTATE1	18	GPI8/-RING
19	GPO6/C4PSTOP	20	GPI9/-THRM
21	GPIO0/SMBDT2	22	GPI5/-EXTSMI
23	GPIO1/SMBCK2	24	GPI4/-BATLOW
25	GND	26	GND

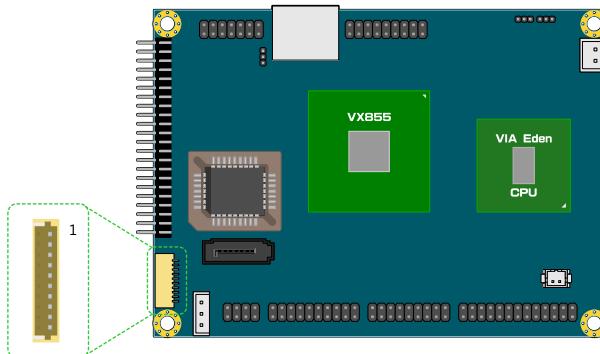


(Pin 11) Default: -SIOSMI

## UART/VCP port 2: J1

UART offers TTL level serial signal for the user to easily convert to support RS232/RS422/RS485. Or, the user may use it as the VCP for Video capture.

Pin	VCP Signal	UART Signal (default)
1	+3.3V/+5V	
2	-	SIN_1
3	-	SOUT_1
4	-	DCD_1
5	-	RI_1
6	GND	GND
7	-	DTR_1
8	VCPHS	CTS_1
9	VCPVS	RTS_1
10	VCPCLK	DSR_1



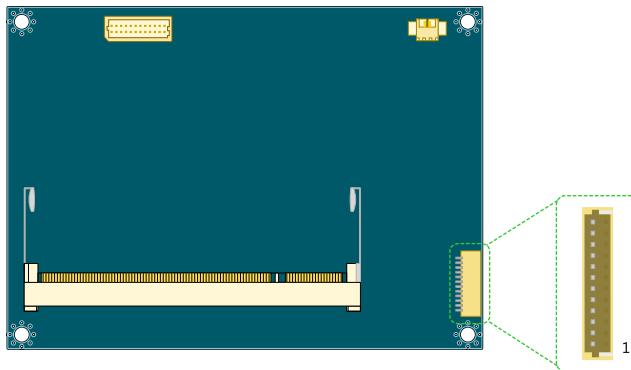
(Pin 1) Default: 5V

## BOTTOM SIDE CONNECTOR

### UART/VCP port 1: J2

UART offers TTL level serial signal for the user to easily convert to support RS232/RS422/RS485. Or, the user may use it as the VCP for Video capture.

Pin	VCP Signal	UART Signal (default)
1	GND	GND
2	DVPSCLK	-LPCRST
3	DVSPD	-
4	VCPD7	CTS_0
5	VCPD6	RTS_0
6	VCPD5	DSR_0
7	VCPD4	DTR_0
8	VCPD3	SIN_0
9	VCPD2	SOUT_0
10	VCPD1	DCD_0
11	VCPD0	RI_0
12		+3.3V/+5V

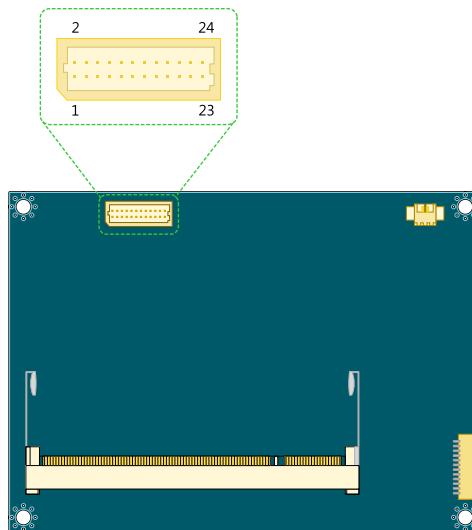


(Pin 12) Default: 3.3V

## LVDS Panel connector: LVDS1

The single-channel LVDS connector allows you to connect the panel's LVDS cable directly to support LVDS panel.

Pin	Signal	Pin	Signal
1	LVDS0-	2	LVDS1-
3	LVDS0+	4	LVDS1+
5	GND	6	GND
7	Panel_VDD	8	LVDSD2-
9	Panel_VDD	10	LVDSD2+
11	LCD1_DATA	12	GND
13	LCD1_CLK	14	LVDSCLK+
15	GND	16	LVDSCLK-
17	Back Light_VDD	18	GND
19	Back Light_VDD	20	-
21	BL_ENABLE	22	-
23	DIMMING	24	GND



(Pin 23) DIMMING: LVDS Backlight Brightness Voltage Control, 0V ~ 3.3V

Level 0: 0%

Level 3: 75%

Level 1: 25%

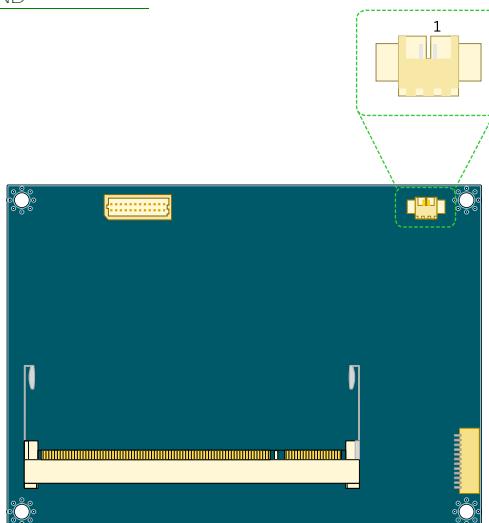
Level 4: 100%

Level 2: 50%

## External Battery: BAT1

The mainboard comes with external CMOS battery connector. This 2-pin connector used to connect the external cable battery for CMOS.

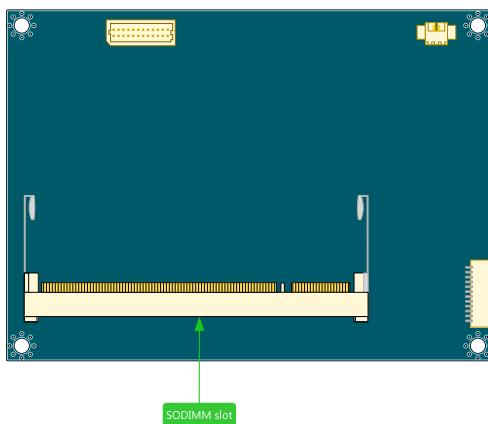
Pin	Signal
1	+3.3VBAT
2	GND



## Memory Module Installation

### Memory Slot: SODIMM 1

The VIA EPIA-P720 Pico-ITX mainboard has one 200-SODIMM slot for DDR2 667/533 SDRAM memory modules and supports memory sizes up to 2 GB.



### Available DDR2 SDRAM Configuration

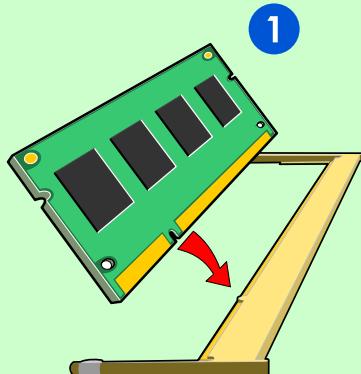
Refer to the table below for available DDR2 SDRAM configurations on the mainboard.

Slot	Module Size	Total
SODIMM	64 MB, 128 MB, 256 MB, 512 MB, 1 GB, 2 GB	64 MB - 2 GB
	Maximum supported system memory	2 GB

## Installing the memory

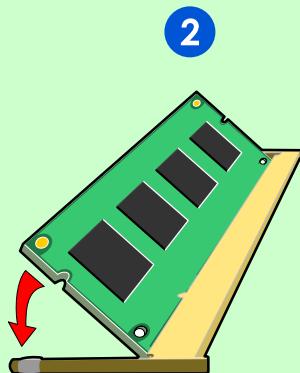
### Step 1

Locate the SODIMM slot in the mainboard and align the notch on the SODIMM with the memory slot.



### Step 2

Insert the SODIMM module at a 45 degree angle. Then push the SODIMM down until it snaps into the locking mechanism.





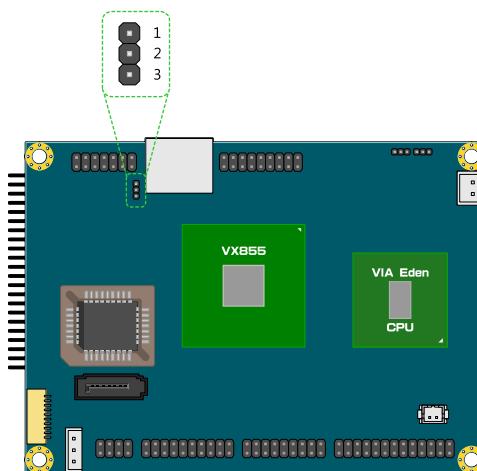
3

## Onboard Jumpers

## Clear CMOS jumper: JM1

The onboard CMOS RAM stores system configuration data and has an onboard battery power supply. To reset the CMOS settings, set the jumper on pins 2 and 3 while the system is off. Return the jumper to pins 1 and 2 afterwards. Setting the jumper while the system is on will damage the mainboard. The default setting is on pins 1 and 2.

Setting	1	2	3
Normal Operation (default)	ON	ON	OFF
Clear CMOS setting	OFF	ON	ON



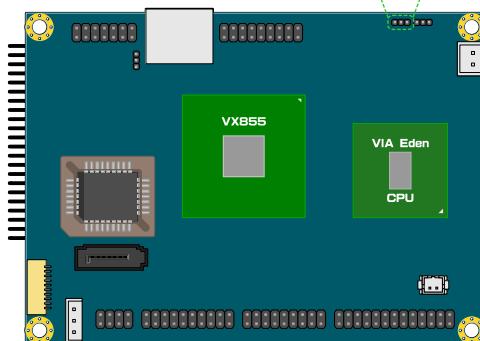
**Caution:**

Except when clearing the RTC RAM, never remove the cap from the CLEAR\_CMOS jumper default position. Removing the cap will cause system boot failure. Avoid clearing the CMOS while the system is on; it will damage the mainboard.

## LCD Panel Power Selector: JM2

This jumper determines the input voltage for the LCD connector.

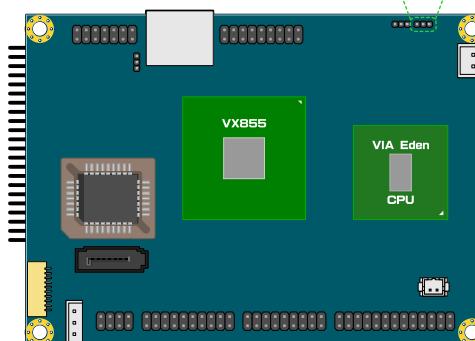
Setting	1	2	3
+5V	ON	ON	OFF
+3.3V (default)	OFF	ON	ON



## LCD Backlight Power Selector: JM3

This jumper determines the input voltage for the LCD backlight inverter.

Setting	1	2	3
+12V	ON	ON	OFF
+5V (default)	OFF	ON	ON





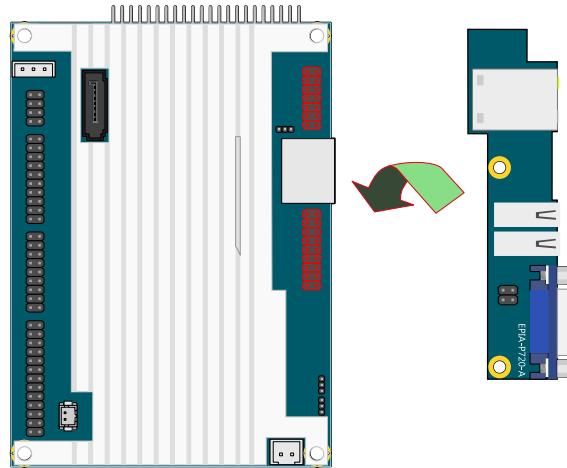
# 4

## P720-A I/O Module Installation

# P720-A INSTALLATION PROCEDURE

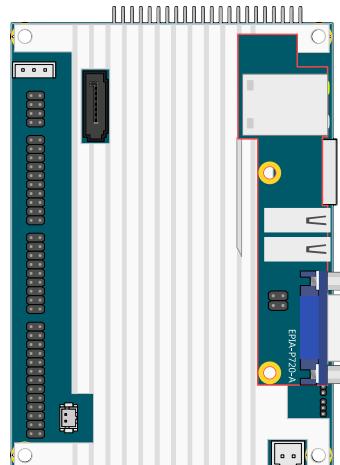
## Step 1

Align and mount the P720-A board.



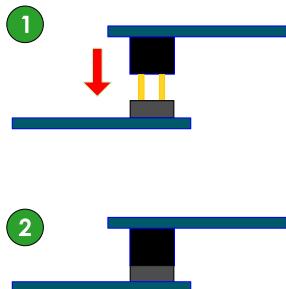
## Step 2

Align the CON1 (VGA & USB board-to-board connector) and CON2 (LAN board-to-board connector) of P720-A I/O module board with the CN3 and VGA\_USB1 pin headers to the top side of EPIA-P720 mainboard respectively.



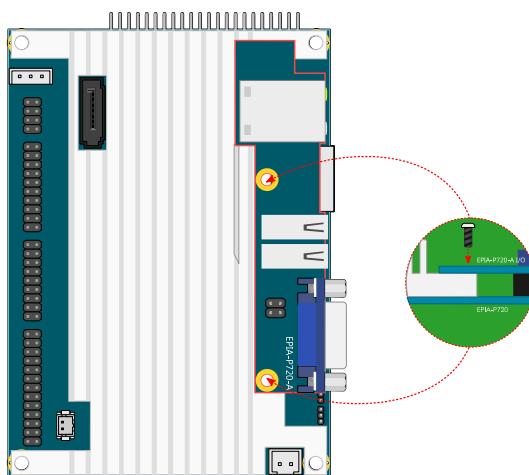
### Step 3

Then gently press down until the pins on the EPIA-P720 mainboard have been fully inserted into the CON1 and CON2 connectors of the P720-A I/O module board.



### Step 4

Secure the EPIA-P720-A I/O module with two screws.





# 5

## BIOS Setup

This chapter gives a detailed explanation of the BIOS setup functions.

## ENTERING THE BIOS SETUP MENU

Power on the computer and press **<Delete>** during the beginning of the boot sequence to enter the BIOS setup menu. If you missed the BIOS setup entry point, restart the system and try again.

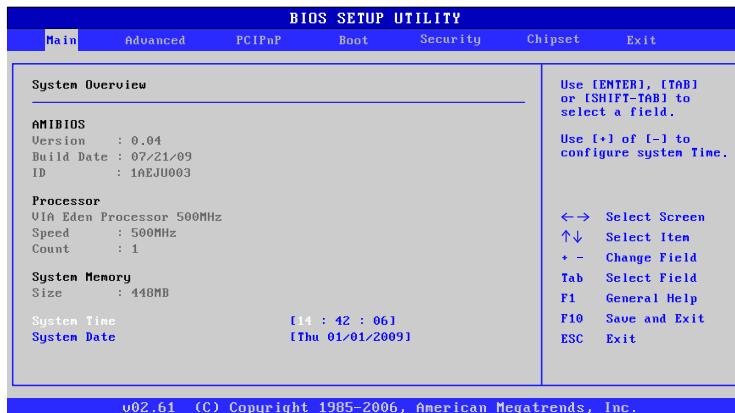
### CONTROL KEYS

Keys	Description
Up	Move to the previous item
Down	Move to the next item
Left	Move to the previous tab
Right	Move to the next tab
Enter	Select the item
Esc	Jumps to the Exit menu or returns to the main menu from a submenu
+ (number pad)	Increase the numeric value
- (number pad)	Decrease the numeric value
F1	General help, only for Status Page Setup Menu and Option Page Setup Menu
F7	Discard Changes
F9	Load Optimized defaults
F10	Save all the changes and exit

## GETTING HELP

The BIOS setup program provides a “**General Help**” screen. You can display this screen from any menu/sub-menu by pressing **<F1>**. The help screen displays the keys for using and navigating the BIOS setup. Press **<Esc>** to exit the help screen.

# MAIN MENU



## AMIBIOS

BIOS version number and related information.

## Processor

CPU information.

## System Memory

Memory size.

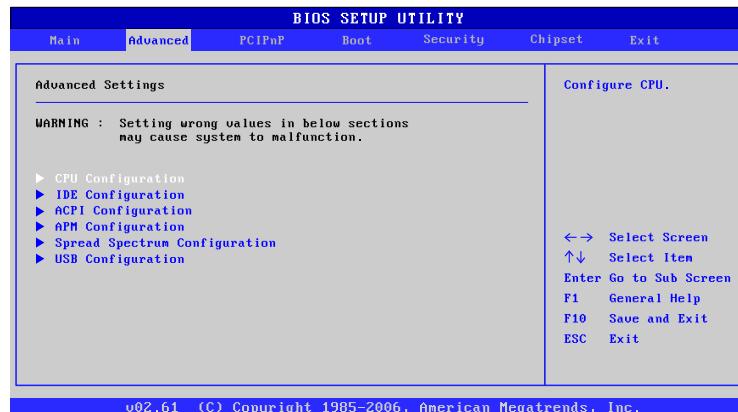
## System Time

Use the key "+" or "-" to configure system time. The time format is [Hour : Minute : Second].

## System Date

Use the key "+" or "-" to configure system Date. The date format is [Day, Month, Date, Year].

# ADVANCED SETTINGS



CPU Configuration

IDE Configuration

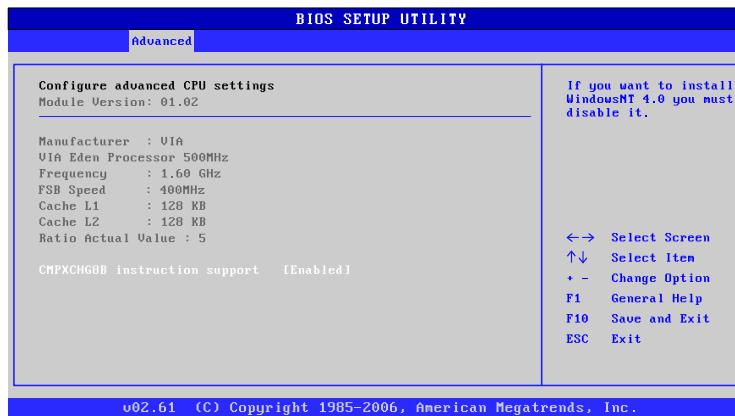
ACPI Configuration

APM Configuration

Spread Spectrum Configuration

USB Configuration

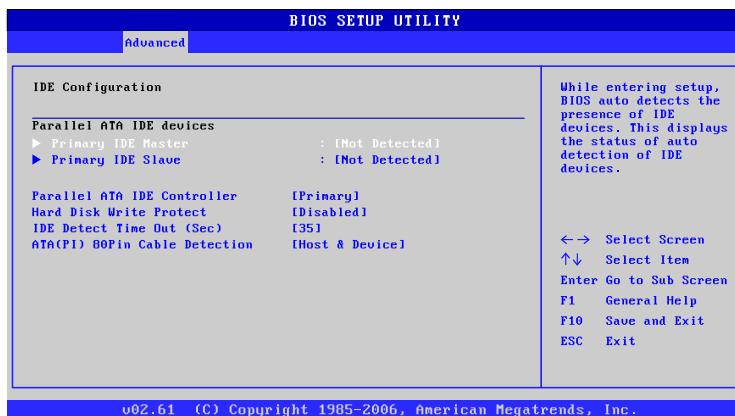
# CPU CONFIGURATION



## CMPXCHG8B instruction support

Settings: [Enabled, Disabled]

# IDE CONFIGURATION



## Parallel ATA IDE Controller

Settings: [Disabled, Primary]

## Hard Disk Write Protect

Settings: [Disabled, Enabled]

## IDE Detect Time Out (Sec)

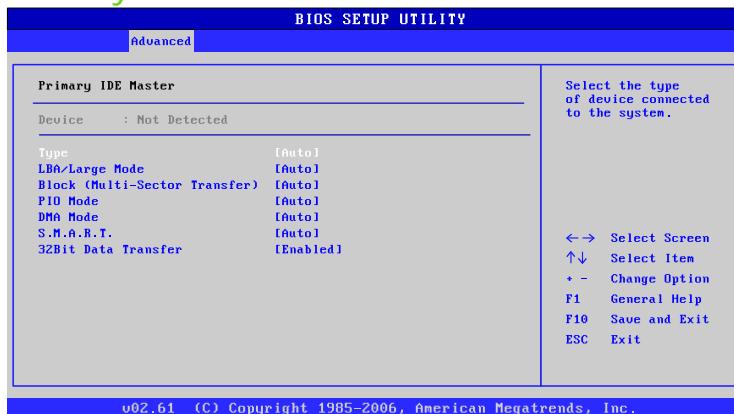
Settings: [0, 5, 10, 15, 20, 25, 30, 35]

## ATA(PI) 80Pin Cable Detection

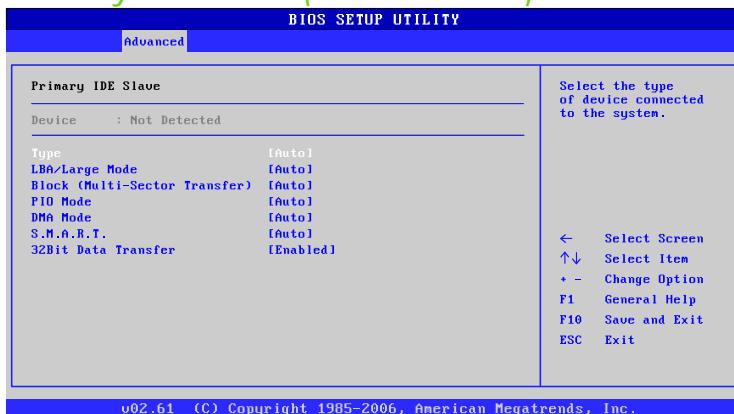
Settings: [Host & Device, Host, Device]

# IDE DRIVES

## Primary IDE Master



## Primary IDE Slave (SATA Device)



### Type

Settings: [Not Installed, Auto, CD/DVD, ARMD]

### LBA/Large Mode

Settings: [Disabled, Auto]

## Block (Multi-Sector Transfer)

Settings: [Disabled, Auto]

## PIO Mode

Settings: [Auto, 0, 1, 2, 3, 4]

## DMA Mode

Settings: [Auto]

## S.M.A.R.T.

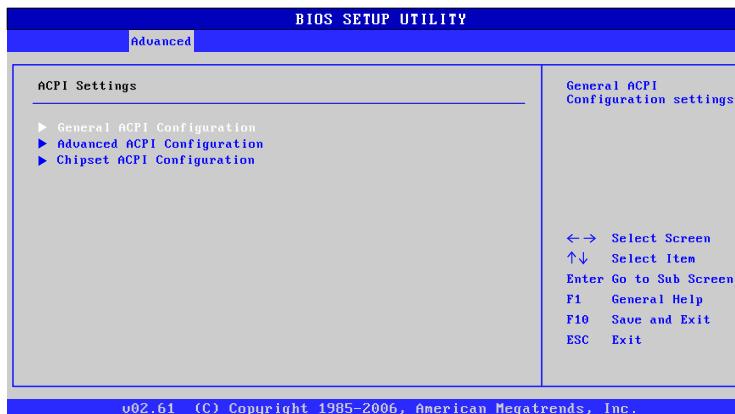
Self Monitoring Analysis and Reporting Technology, a monitoring system for hard disks.

Settings: [Auto, Disabled, Enabled]

## 32Bit Data Transfer

Settings: [Enabled, Disabled]

# ACPI SETTINGS



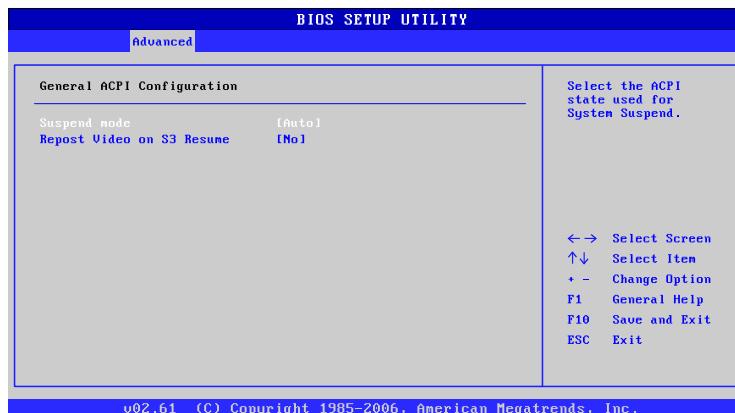
## General ACPI Configuration

This menu contains ACPI (Advanced Configuration and Power Management Interface) options.

## Advanced ACPI Configuration

## Chipset ACPI Configuration

# GENERAL ACPI CONFIGURATION



## Suspend Mode

Select the ACPI state used for system suspend.

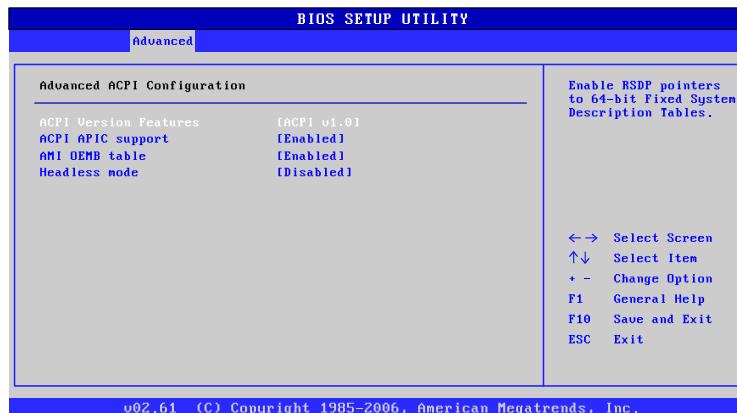
Settings	Description
S1(POS)	S1/Power On Suspend (POS) is a low power state. In this state, no system context (CPU or chipset) is lost and hardware maintains all system contexts
S3(STR)	S3/Suspend To RAM (STR) is a power-down state. In this state, power is supplied only to essential components such as main memory and wakeup-capable devices. The system context is saved to main memory, and context is restored from the memory when a "wakeup" event occurs.
Auto	Depends on the OS to select the state.

## Repost Video on S3 Resume

To determine whether to invoke VGA BIOS post on S3/STR resume or not.

Settings: [No, Yes]

# ADVANCED ACPI CONFIGURATION



## ACPI Version Features

To enable RSDP pointers to 64-bit Fixed System Description Tables.  
Settings: [ACPI v1.0, ACPI v2.0, ACPI v3.0]

## ACPI APIC Support

To include ACPI APIC table pointer to RSDT pointer list.  
Settings: [Enabled, Disabled]

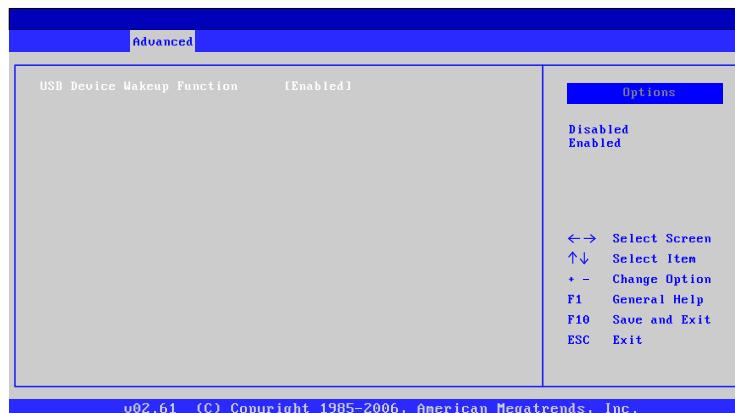
## AMI OEMB Table

To include OEMB table pointer to R(X)SDT pointer lists.  
Settings: [Disabled, Enabled]

## Headless Mode

To enable or disable headless operation mode through ACPI.  
Settings: [Disabled, Enabled]

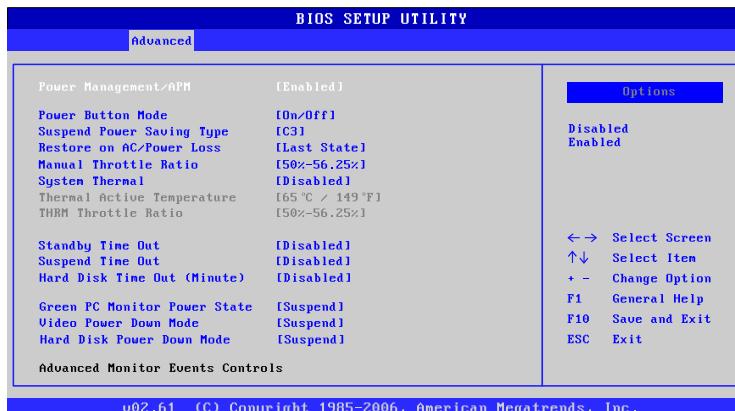
# CHIPSET ACPI CONFIGURATION



## USB Device Wakeup Function

Settings: [Disabled, Enabled]

# APM CONFIGURATION



## Power Management / APM

Settings: [Disabled, Enabled]

## Power Button Mode

Settings: [On/Off, Standby, Suspend]

## Suspend Power Saving Type

Settings: [C3, S1]

## Restore on AC / Power Loss

The field defines how the system will respond after an AC power loss during system operation.

Settings	Description
Power Off	Keeps the system in an off state until the power button is pressed.
Power On	Restarts the system when the power is back
Last State	Save in last state

## Manual Throttle Ratio

Settings: [0%-6.25%, 6.25%-12.5%, 18.75%-25%, 31.25%-37.5%, 37.5%-43.75%, 43.75%-50%, 50%-56.25%, 56.25%-62.5%, 62.5%-68.75%, 68.75%-75%, 75%-87.5%, 75%-81.25%, 81.25%-87.5%, 87.5%-93.75%, 93.75%-100%]

## System Thermal

Settings: [Disabled, Enabled]

## Standby Time Out

Settings: [Disabled, 1/2/4/8/10/20/30/40/50/60 minutes]

## Suspend Time Out

Settings: [Disabled, 1/2/4/8/10/20/30/40/50/60 minutes]

## Hard Disk Time Out (Minute)

Settings: [Disabled, 1/2/3/4/5/6/7/8/9/10/11/12/13/14/15 minutes]

## Green PC Monitor Power State

Settings: [Standby, Suspend, Off]

## Video Power Down Mode

Settings: [Disabled, Standby, Suspend]

## Hard Disk Power Down Mode

Settings: [Disabled, Standby, Suspend]

## Display Activity

Settings: [Ignore, Monitor]

## Monitor IRQ3~15

Enables or disables the monitoring of the specified IRQ line.

Settings: [Ignore, Monitor]



### Note:

IRQ (Interrupt Request) lines are system resources allocated to I/O devices. When an I/O device needs to gain attention of the operating system, it signals this by causing an IRQ to occur. After receiving the signal, when the operating system is ready, the system will interrupt itself and perform the service required by the IO device.

## Resume on Ring

Settings: [Disabled, Enabled]

## Resume on PME#

Settings: [Disabled, Enabled]

## Resume On PS/2 KBC

Settings: [Disabled, S3, S3/S4/S5]

## Wake-up Key

Settings: [Any Key, Specific Key]

## Resume on PS/2 Mouse

Enable any mouse activity to restore the system from the power saving mode to an active state.

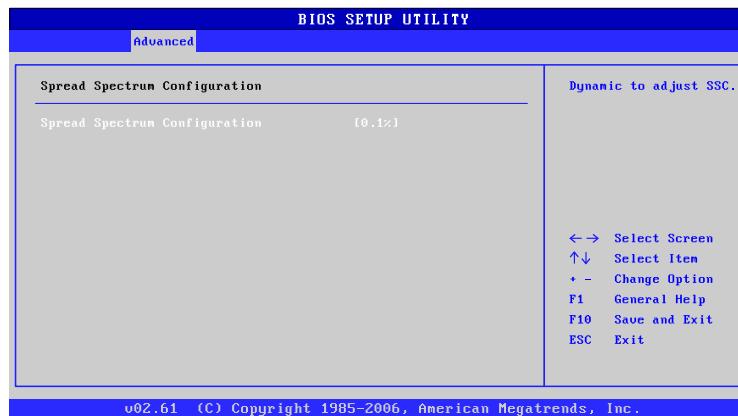
Settings: [Disabled, S3, S3/S4/S5]

## Resume on RTC Alarm

Set a scheduled time and/or date to automatically power on the system.

Settings: [Disabled, Enabled]

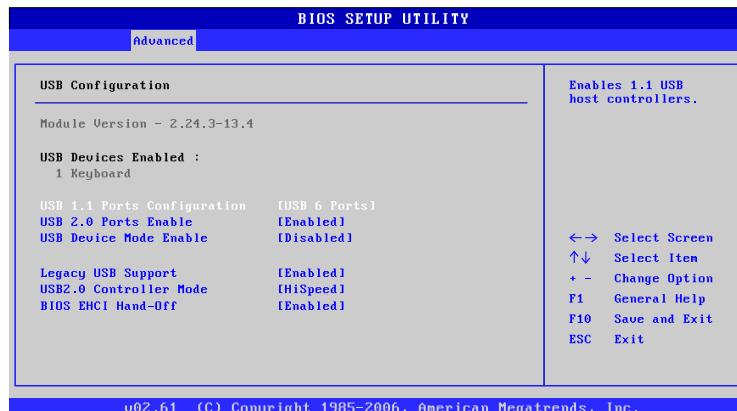
# SPREAD SPECTRUM CONFIGURATION



## Spread Spectrum Configuration

Settings: [Disabled, 0.1%, 0.2%, 0.3%, 0.4%, 0.5%, 0.6%, 0.7%, 0.8%, 0.9%]

# USB CONFIGURATION



## USB 1.1 Ports Configuration

To enable USB 1.1 host controllers.

Settings: [Disabled, USB 2 ports, USB 4 ports, USB 6 ports]

## USB 2.0 Ports Enable

To enable USB 2.0 host controllers.

Settings: [Disabled, Enabled]

## USB Device Mode Enable

Settings: [Enabled, Disabled]

## Legacy USB Support

To enable support for legacy USB.

Settings: [Disabled, Enabled, Auto]

## USB 2.0 Controller Mode

To configure the USB 2.0 controller in HiSpeed (480Mbps) or FullSpeed (12Mbps).

Settings: [FullSpeed, HiSpeed]

## BIOS EHCI Hand-Off

Settings: [Disabled, Enabled]

# ADVANCED PCI/PnP SETTINGS

BIOS SETUP UTILITY

Main	Advanced	PCI PnP	Boot	Security	Chipset	Exit
<b>Advanced PCI/PnP Settings</b> <hr/> <b>WARNING :</b> Setting wrong values in below sections may cause system to malfunction.						<b>Clear NVRAM during System Boot.</b>
Clear NVRAM [No] Plug & Play O/S [No] PCI Latency Timer [64] Allocate IRQ to PCI VGA [Yes] Palette Snooping [Disabled] PCI IDE BusMaster [Enabled] Off Board PCI/ISA IDE Card [Auto]						←→ Select Screen ↑↓ Select Item + - Change Option F1 General Help F10 Save and Exit ESC Exit
002.61 (C) Copyright 1985-2006, American Megatrends, Inc.						



**Note:**

This section covers some very technical items and it is strongly recommended to leave the default settings as it is unless you are an experienced user.

## Clear NVRAM

To clear NVRAM during system boot.

Settings: [No, Yes]

## Plug & Play O/S

Settings: [No, Yes]

## PCI Latency Timer

Value in units of PCI clocks for PCI device latency timer register.

Settings: [32, 64, 96, 128, 160, 192, 224, 248]

## Allocate IRQ to PCI VGA

Settings: [Yes, No]

## Palette Snooping

Settings: [Disabled, Enabled]

## PCI IDE BusMaster

Settings: [Disabled, Enabled]

## Off Board PCI/ISA IDE Card

Settings: [Auto, PCI Slot1, PCI Slot2, PCI Slot3, PCI Slot4, PCI Slot5, PCI Slot6]

## IRQ3~15

Settings: [Available, Reserved]

## DMA Channel 0~7

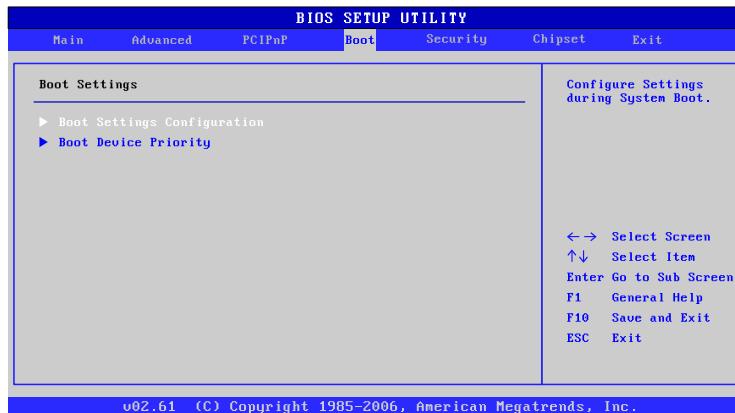
Settings: [Available, Reserved]

## Reserved Memory Size

To decide the size of memory block to reserve for legacy ISA devices.

Settings: [Disabled, 16k, 32k, 64k]

# BOOT SETTINGS



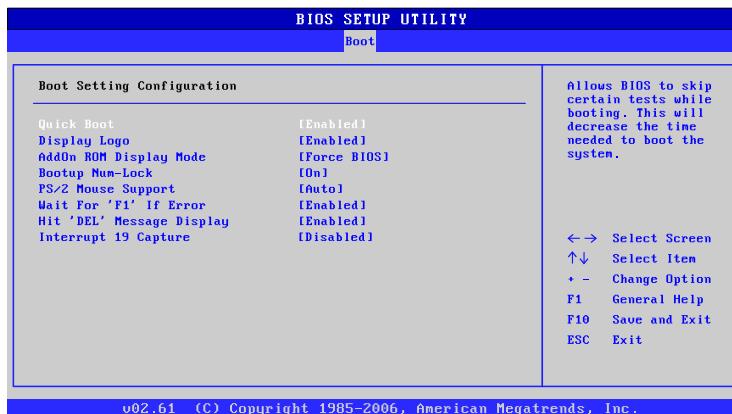
## Boot Settings Configuration

Configuration settings during system boot.

## Boot Device Priority

Specifies the boot device priority sequence.

# BOOT SETTINGS CONFIGURATION



v02.61 (C) Copyright 1985-2006, American Megatrends, Inc.

## Quick Boot

Settings: [Disabled, Enabled]

## Display Logo

Settings: [Disabled, Enabled]

## AddOn ROM Display Mode

Settings: [Force BIOS, Keep Current]

## Bootup Num-Lock

To select power-on state for Num-Lock.

Settings: [Off, On]

## PS/2 Mouse Support

Settings: [Disabled, Enabled, Auto]

## Wait For 'F1' If Error

Settings: [Disabled, Enabled]

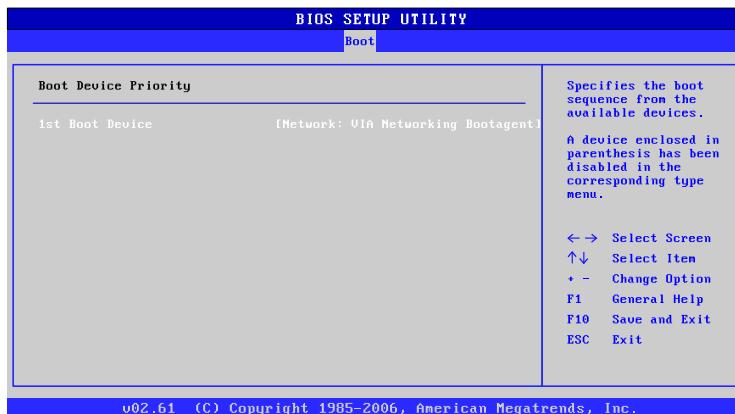
## Hit 'DEL' Message Display

Settings: [Disabled, Enabled]

## Interrupt 19 Capture

Settings: [Disabled, Enabled]

# BOOT DEVICE PRIORITY

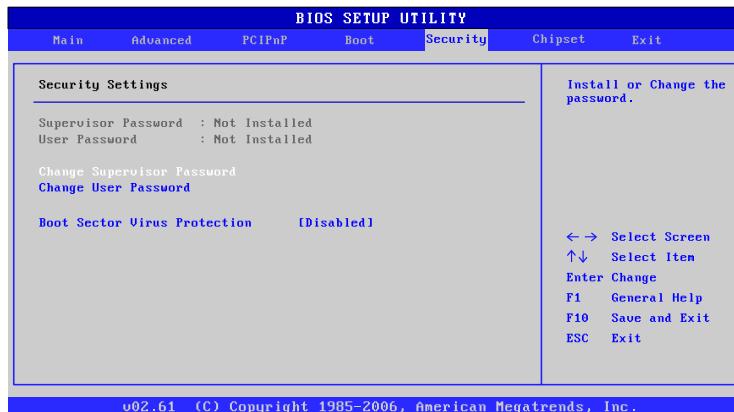


## 1st Boot Device

To specifies the boot sequence from the available devices. The available boot devices are detected dynamically according to real situation and variable options will be provided.

Settings: [Network: VIA Networking Bootagent, Disabled]

# SECURITY SETTINGS



## Change Supervisor Password

This option is for setting a password for entering BIOS Setup. When a password has been set, a password prompt will be displayed whenever BIOS Setup is run. This prevents an unauthorized person from changing any part of your system configuration.

When a supervisor password is used, the BIOS Setup program can be accessed and the BIOS settings can be changed.

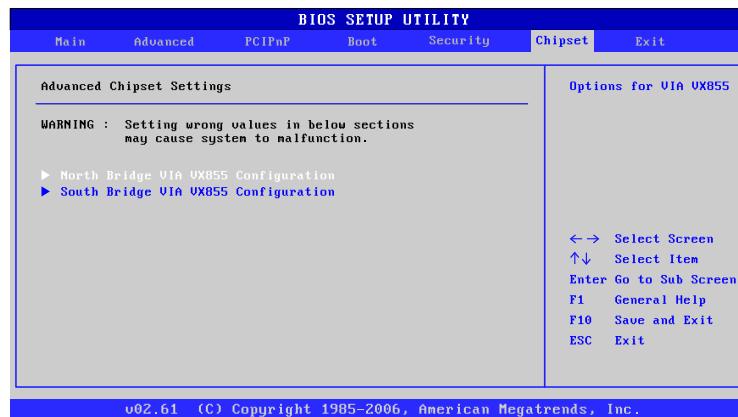
## Change User Password

When a user password is used, the BIOS Setup program can be accessed but the BIOS settings cannot be changed.

## Boot Sector Virus Protection

Settings: [Disabled, Enabled]

# ADVANCED CHIPSET SETTINGS

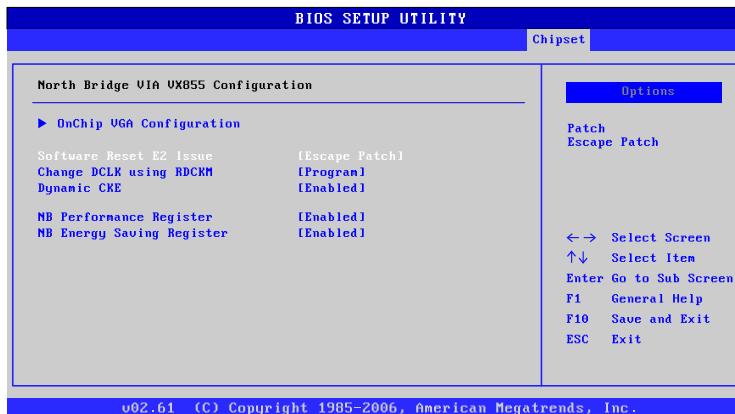
**Caution:**

The Advanced Chipset Features menu is used for optimizing the chipset functions. Do not change these settings unless you are familiar with the chipset.

## North Bridge VIA VX855 Configuration

## South Bridge VIA VX855 Configuration

# NORTH BRIDGE VIA VX855 CONFIGURATION



## Software Reset E2 Issue

Settings: [Patch, Escape Patch]

## Change DCLK using RDCKM

Settings: [Program, Escape Program]

## Dynamic CKE

Settings: [Disabled, Enabled]

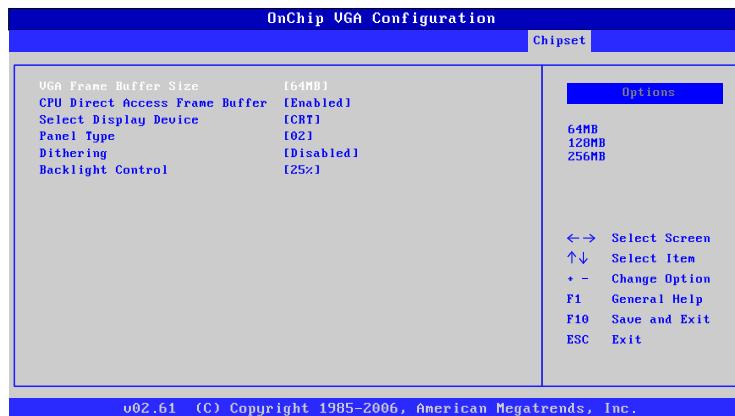
## NB Performance Register

Settings: [Disabled, Enabled]

## NB Energy Saving Register

Settings: [Disabled, Enabled]

# ONCHIP VGA CONFIGURATION



## VGA Frame Buffer Size

Settings: [64MB, 128MB, 256MB]

## CPU Direct Access Frame Buffer

Settings: [Disabled, Enabled]

## Select Display Device

Settings: [CRT, LCD, HDMI, CRT+LCD, CRT+HDMI]

## Panel Type

Settings: [02]

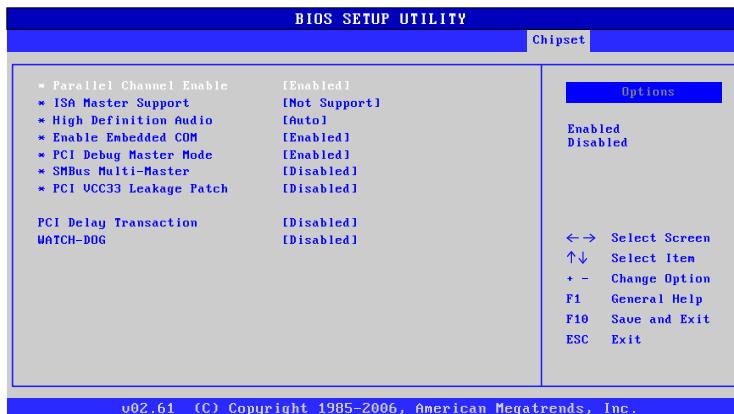
## Dithering

Settings: [Disabled, Enabled]

## Backlight Control

Settings: [0%, 25%, 50%, 75%, 100%]

# SOUTH BRIDGE VIA VX855 CONFIGURATION



## Parallel Channel Enable

Settings: [Enabled, Disabled]

## ISA Master Support

Settings: [Support, Not Support]

## High Definition Audio

Settings: [Disabled, Auto]

## Enable Embedded COM

Settings: [Disabled, Enabled]

## PCI Debug Master Mode

Settings: [Disabled, Enabled]

## SMBus Multi-Master

Settings: [Disabled, Enabled]

## PCI VCC33 Leakage Patch

Settings: [Disabled, Enabled]

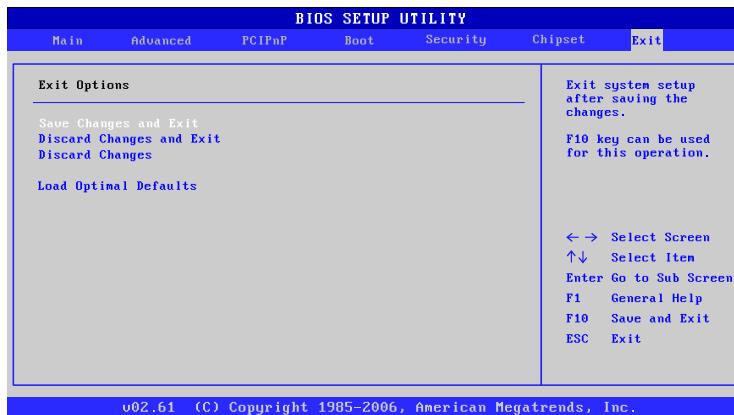
## PCI Delay Transaction

Settings: [Disabled, Enabled]

## WATCH-DOG

Settings: [Disabled, Enabled]

# EXIT OPTIONS



## Save Changes and Exit

Exit system setup after saving the changes, or press "F10".

## Discard Changes and Exit

Exit system setup without saving any changes, or press "Esc".

## Discard Changes

Discard changes which have been done so far to any of the setup questions, or press "F7".

## Load Optimal Defaults

Load optimal default values for all the setup items, or press "F9". The default optimized values are set by the mainboard manufacturer to provide a stable system with optimized performance.



# 6

## Driver Installation

This chapter gives you brief descriptions of each mainboard driver and application. You must install the VIA chipset drivers first before installing other drivers such as VGA drivers. The applications will only function correctly if the necessary drivers are already installed.

# DRIVER UTILITIES

## Getting Started

The VIA EPIA-P720 includes a driver CD that contains the drivers and software for enhancing the performance of the system. The drivers can also be downloaded from <http://www.via.com.tw>.



**Note:**

The driver utilities and software are updated from time to time. The latest updated versions are available at  
<http://www.via.com.tw>

## Running the Driver Utilities CD

To start using the CD, insert the CD into the CD-ROM or DVD-ROM drive. The CD should run automatically after closing the CD-ROM or DVD-ROM drive. The driver utilities and software menu screen should then appear on the screen. If the CD does not run automatically, click on the "Start" button and select "Run...". Then type: "D:\Setup.exe".

For Linux drivers, click the right button on mouse and click open. Linux drivers located in the "Driver" folder.



**Note:**

D: might not be the drive letter of the CD-ROM/DVD-ROM in your system.

## CD CONTENT

- VIA 4 in 1 Drivers**
  - Contains VIA ATAPI Vendor Support Driver (enables the performance enhancing bus mastering functions on ATA-capable Hard Disk Drives and ensures IDE device compatibility), AGP VxD Driver (provides service routines to your VGA driver and interface directly to hardware, providing fast graphical access), IRQ Routing Miniport Driver (sets the system's PCI IRQ routing sequence) and VIA INF Driver (enables the VIA Power Management function).
  - Includes V-RAID and RAID tools.
- VIA Graphics Driver**
  - Enhances the onboard VIA graphic chip.
  - Windows XP and Linux drivers are provided.
- VIA Audio Driver**
  - Enables access to the onboard VIA HD audio codec.
- VIA USB 2.0 Driver**
  - Enhances VIA USB 2.0 ports.
- VIA LAN Driver**
- VIA GigaLAN Driver**
- VIA RAID Driver**
  - Support for SATA RAID devices